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Accessibility and Utilisation of Open Educational Resources in Distance Learning Centres in Oyo State, Nigeria

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Abstract

Distance learning has become increasingly important during the COVID-19 pandemic, with educators and institutions turning to open educational resources (OER) to facilitate learning. The study aimed to determine the access of distance learning students to open educational resources (OER) for learning and to examine their utilisation of these resources in Oyo State, Nigeria. Employing a descriptive survey research design, data were collected through a Google Form-based online questionnaire from 500 open educational students in three distance learning centres within the study area. After data scrutiny, a total of 381 valid responses were retained for analysis, and hypotheses were tested at a significance level of 0.05, with data analysis conducted using SPSS software. Descriptive statistics were employed to address the research questions. From the findings, it was discovered that students can access the essential devices and OER either via their centre's website or using the free Wi-Fi provided by the centre, with 52.9 % not accessing them and 47.1 % accessing them at least once a week. The utilisation of OER was limited, with some resources rarely or never used by students (always used = 34.4%, rarely used = 32.1%, and never used = 33.5%). The findings reveal that while the availability of Open Educational Resources (OER) positively influences their utilisation among distance learning students; increased accessibility does not necessarily lead to higher usage, indicating that other factors such

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as quality, relevance, and awareness play critical roles in OER engagement. However, no significant gender difference was found in the utilisation of open educational resources. In conclusion, distance learning students had access to and utilised OER, but some missed out on a valuable and cost-effective resource. Recommendations included improving students' access, encouraging the use of available OER, along with engagement in awareness campaigns and training sessions to promote the effective use of open educational resources in distance learning.

Keywords: Accessibility, Utilisation, Open Educational Resources, Distance Learning, Distance Learning Centres

Introduction

An ever-changing education landscape has commercialised the notion of access and use of OER in distance learning settings, especially in Oyo State, Nigeria. With technological innovations and alternative modes of education gradually taking centre stage, technology and open resources have served as a catalyst, catalysing change in the setup of learning environments. Being in the southwestern part of Nigeria, Oyo State is somewhat familiar with the transformative force of technology in education in Nigeria. Distance learning centres in the state stand as a crucial factor in delivering educational programmes to diverse populations that are frequently scattered geographically. Therefore, access to and methods of utilisation of OER in the centres are crucial issues that can truly make or mar the distance education programmes.

The Nigerian government has made efforts to enhance educational access and quality by promoting the use of Open Educational Resources (OER) (Adedoyin, 2024). However, lack of empirical evidence regarding the availability and effective implementation of these resources significantly hampers their accessibility and utilisation among students (Adelakun & Iyanda, 2025; Itasanmi, 2020). OER can provide invaluable materials that democratise education and improve learning outcomes, yet without proper data, stakeholders cannot

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assess the current landscape or make informed decisions about resource allocation (Ehiorobo, 2018). This underscores a pressing need for comprehensive studies to evaluate the availability of OER in Nigeria and their use, to foster a more inclusive educational environment that leverages the potential of OER. Moreover, addressing these gaps could lead to more robust policy frameworks that support the integration of OER in educational institutions, ultimately benefiting learners across the country.

The term 'accessibility' not only means the physical availability of OER but also implies the extent to which students can make use of these resources within their learning processes. Recognising the capacity of OER in democratising education for the provision of learning materials at low cost or free of charge increases the level of importance placed on the factors that determine the adoption and effective use of these resources in the unique context of distance learning centres in Oyo State, Nigeria.

While several studies have identified challenges that hinder the effective use of electronic resources by students, a separate study on users' perceptions of the electronic resources available at the MTN Library of the University of Nigeria, Nsukka; revealed that users are highly aware of and satisfied with these resources for their academic programs (Ekere et al., 2016). This positive sentiment can most readily be understood by considering the availability of relevant ecological resources, sustainable digital infrastructure, uninterrupted power supply, adequate bandwidth for the operation of internet services, along with competent library staff. Distance learning became a necessity in Nigeria during the period of economic recession because the majority of the population lives in remote areas, and it has thus become very difficult to access academic institutions located in urban centres.

Furthermore, distance learning was introduced for those who joined workforce without completing their education as a result of family engagements and difficulty of combining their work with studies and others who could not secure admission in the conventional institutions of higher learning (Adamu, 2022). In most of the developing countries in Africa, gender inequality deprives a vast number of female folk access to higher education (Abdullahi, 2024; Adeosun & Owolabi, 2021) but with the

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distance learning program, such group of people could be enrolled into the institution of higher learning (Adamu et al., 2024). Nevertheless, some other usual factors necessitated the introduction of distance learning in Nigeria, such as the remoteness of localities, physical disabilities, and high tuition fees in most privately-owned universities (Adebiyi, 2022). These and other reasons are responsible for why millions of Nigerians are deprived of higher education, irrespective of their eligibility. Distance learning provides avenues for higher education for such a vast number of underprivileged (Ayodele, 2023).

The National Universities Commission that oversees the affairs of open distance education in Nigeria, states that the broader objectives of open universities in Nigeria are to improve access to education; to provide flexible, yet high-quality educational options; to ensure equity and equality of opportunities for learning; and to promote the culture of global learning. More so, these objectives aim to reduce the costs and inconveniences associated with accessing and delivering education, promote education for all and lifelong learning, expand access to education; particularly at the university level in Nigeria; and provide instructional resources through the extensive use of information and communication technologies (Ajadi et al., 2014; Umezulike, 2015).

Studies by Garad, Al-Ansi, and Qamari (2021) on the role of e-learning infrastructure and cognitive competence in distance learning effectiveness during the Covid-19 Pandemic, they claimed a positive influence of e-learning infrastructure and cognitive competence on distance learning effectiveness. They emphasised these factors in the development of distance learning and the possibilities of e-learning platforms for institutions of higher learning. This shows that the institution, which can provide funding for a good e-learning infrastructure and maintain the enhanced cognitive competence of students, faculties, and administrative staff for distance learning, will have a positive outcome. Hockings, Brett, and Terentjevs (2012), on the other hand, gave insight into inclusive learning and teaching in higher education through OER. Their emphasis lies on the potential of OER to make a difference in creating an inclusive learning environment. It thus puts OER at the forefront in ensuring accessibility and equity

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of distance education, particularly for diverse learners.

Zhang et al. (2020) conducted a literature review on the accessibility of OER and practices for disabled learners. They underscore the importance of ensuring that OER are accessible to all learners, including those with disabilities. This highlights a critical consideration in the utilisation of OER, indicating the need for inclusive design and accessibility features to support diverse learner needs. Ismaili (2021) conducted a case study on students' attitudes towards distance learning, specifically evaluating their perception of OER during the pandemic. The study highlight that students perceive OER as interesting and beneficial for improving their understanding of topics. This suggests that students are open to the use of OER in distance learning and view it as a valuable resource for their learning experience.

This study seeks to delve into the nuanced aspects of accessibility and utilisation of OER in distance education, shedding light on the challenges and opportunities that characterise the educational landscape in Oyo State, Nigeria. By understanding the intricacies of how students' access and engage with OER, educators, policymakers, and stakeholders can formulate informed strategies to enhance the overall quality and inclusivity of distance learning experiences in the state.

Purpose of the Study

The aim of this study was to examine the access, and utilisation of open educational resources in distance learning centres in Oyo State, Nigeria. Specifically, this study:

1. determined distance learning students' access to Open educational resources for learning
2. examined distance learning students' utilisation of open educational resources for learning in Oyo State;
3. found out the relationship between access, utilisation and availability of open educational resources for learning; and
4. examined the male and female differences in distance learning students' utilisation of open educational resources for learning in Oyo State

Research Design

The study adopted a descriptive research design of the survey type using online survey. This design is found appropriate because it is a scientific method which involves observing and describing the

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behaviour of the subject without influencing it in any way.

Participants

The population for this study consists of all Distance Learning Students in Nigeria. The target population consisted of Distance Learning Students in Oyo State, Nigeria. A multi-stage sampling procedure was adopted for this study; purposive sampling technique was used to select the three sampled distance learning centres in Oyo State for this study because they are the only three distance learning centres in Oyo State.

Research Instrument

The instrument for this study was a researcher-designed online survey questionnaire, which was used to collect data for this study. An online survey was chosen for this study because it was useful for gathering data in real time from a large sample at different locations. The survey instrument was designed with Google Forms, and links were generated and shared among 500 respondents.

Results

Respondents' Demography

Frequency count and percentages were used to describe the characteristics of respondents' demographics in this study, as shown in the tables below. A total of 500 participants accessed the questionnaire via a link provided by the researcher.

Demographic Information

Table 1:

Distribution of Respondents' Valid Questionnaire for the Online Survey

			Institution A	Institution B	Institution C	Total
Respondent questionnaire	Valid	Frequency	191	127	63	381
		Percentage	38.2	25.4	12.6	76.2
	Invalid	Frequency	63	37	19	119
		Percentages	12.6	7.4	3.8	23.8

Table 1 shows the distribution of valid questionnaires for the online survey conducted across three institutions, Institution A, Institutions B, and Institutions

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C. Institution A had the highest number of valid questionnaires (38.2%), followed by institutions B (25.4%) and C (12.6%) respectively. Institution A contributed a substantial portion of the valid responses, while Institution C had the lowest. Table 1, also shows data on non-valid questionnaires, which were likely incomplete or contained errors. Institutions A, B and C had 63, 37 and 19 copies of invalid questionnaires respectively. The total number of the copies of valid questionnaires were 381, and the total number of copies of non-valid questionnaires were 119.

Table 2:

Distribution of Respondent by Gender

		Frequency	Percent
Gender	Male	87	22.8
	Female	294	77.2
		381	100

Table 2 shows the gender distribution of 381 respondents in a survey or study. The majority, approximately 77.2%, are female, with males comprising around 22.8%. This demographic information is crucial for understanding the representation of different genders within the study population.

Research Question One: How do distance learning students' access the needed open educational resources for learning?

Table 3:

Students' Access to Open Educational Resources for Distance Learning

	Items	Not at all	Once a week	Once a month	
S/N		Frequency Percentages	Frequency Percentages	Frequency Percentages	Remark
	I currently own a reading device (e.g. smartphone, tablet, laptop and so on)	94 24.7%	287 75.3%	0 0.0%	Once a week

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	My centre made open educational resources available on the centre's website.	133 34.9%	248 65.1%	0 0.0%	Once a week
	The centre provides free internet connectivity (Wi-Fi).	246 64.6%	135 35.4%	0 0.0%	Not at all
	I subscribe to internet connectivity(data).	230 60.4%	151 39.6%	0 0.0%	Not at all
	As college student, we have access to the college free internet connectivity (Wi-Fi).	289 75.9%	92 24.1%	0 0.0%	Not at all
	I have an e-book reader on my device (e.g. smartphone, tablet, laptop and so on)	173 45.4%	208 54.6%	0 0.0%	Once a week
7	I have access to e-resources apps (e.g. Read Era, Cool Reader, Nook, Blue fire Reader and so on)	229 60.1%	152 39.9%	0 0.0%	Not at all
8	E-resources are made available in my	219 57.5%	162 42.5%	0 0.0%	Not at all

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	centre's library in different formats				
	Total	52.94	47.1		

Table 3 provides insights into students' access to open educational resources for distance learning, with a focus on the frequency of access to various resources. The table is structured to present data on different items related to open educational resources and the corresponding frequency of access, percentages, mean values, and remarks. Firstly, it is important to note that the data in the table indicates that a significant portion of the surveyed students do have access to various open educational resources. Approximately 75.3% of the students reported using reading devices such as smartphones, tablets, or laptops once a week. This suggests that a substantial majority of the students have access to these essential devices for e-learning.

About 65.1% of students reported that their centres made open educational resources available on the centre's website once a week. This indicates that a substantial portion of students can access resources online via their centre's website. A little above half of the students (64.6%) reported that their centre provides free internet connectivity (Wi-Fi) once a week. This is crucial for students who rely on online resources. About 60.4% of students subscribe to internet connectivity (data) once a week. This shows that a majority of the students take the initiative to have their own internet access, which is essential for distance learning. A significant percentage of students (75.9%) reported having access to free internet connectivity (Wi-Fi) provided by the college once a week. This is a valuable resource for students who may not have their own internet access.

Over half of the students (54.6%) have e-book readers on their devices once a week. This indicates that students have the capability to access electronic books, which are commonly used in e-learning. About 60.1% of students reported having access to e-resource apps once a week. These apps are crucial for accessing and reading digital content, which is an integral part of e-learning. A majority of students (57.5%) reported that e-resources are available in their centre's library in different formats once a

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week. This suggests that the physical library also plays a role in providing access to digital learning materials.

Research Question Two: To what extent do distance learning students use open educational resources for distance learning in Oyo State?

Table 4:

Students' Extent of Use of E-Learning Resources for Distance Learning

	items	Always	Rarely	Never		
S/N		Frequency Percentages	Frequency Percentages	Frequency Percentages	Mean	Remarks
	Educational CDs	115 30.2%	162 42.5%	104 27.3%	1.97	Rarely
	e-libraries platform	136 35.7%	146 38.3%	99 26.0%	1.90	Rarely
	e-books and e-manuscript	127 33.3%	144 37.8%	110 28.9%	1.96	Rarely
	e-journals	115 30.2%	141 37.0%	125 32.8%	2.03	Never
	e-magazines	89 23.4%	131 34.4%	161 42.3%	2.19	Never
	Online newspapers	120 31.5%	131 34.4%	130 34.1%	2.03	Never
	Online research report	144 37.8%	160 42.0%	77 20.2%	1.82	Rarely
	Online news	184 48.3%	109 28.6%	88 23.1%	1.75	Rarely
	Online maps	106 27.8%	130 34.1%	145 38.1%	2.10	Never

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.	Online instructional videos e.g. vodcast, YouTube	183 48.0%	100 26.2%	98 25.7%	1.78	Rarely
.	Online instructional audio e.g. podcast	157 41.2%	101 26.5%	123 32.3%	1.91	Rarely
.	Online catalogues	113 29.7%	159 41.7%	109 28.6%	1.99	Rarely
.	Encarta	63 16.5%	146 38.3%	172 45.1%	2.29	Never
.	e-Dictionaries	184 48.3%	93 24.4%	104 27.3%	1.79	Rarely
.	Total	34.4%	32.1%	33.5%		

Table 4 provides valuable insights into students' extent of use of open educational resources for distance learning in Oyo State, with a focus on the frequency and percentages of students who always, rarely, or never use specific open educational resources. Table 4, also includes the mean values for each resource, which give us an overall indication of the level of use. Firstly, it is evident that open educational resources are widely utilised by the students to varying degrees. Educational CDs are rarely used, with 30.2% of students indicating that they always use them, 42.5% rarely use them, and 27.3% never use them. The mean value of 1.97 indicates that these CDs are not frequently accessed.

Similarly, e-libraries platforms, e-books, and e-manuscripts also fall into the "rarely" category, with mean values of 1.90 and 1.96, respectively. This suggests that while a significant portion of students occasionally access these resources, they are not being used extensively. On the other hand,

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resources like e-journals, e-magazines, online newspapers, and online research reports fall into the "never" category, with mean values ranging from 2.03 to 2.19. This indicates that a majority of students do not use these resources at all. Online instructional videos and online instructional audio have mean values of 1.78 and 1.91, respectively, which categorise them as "rarely" used resources. These resources, despite having a relatively higher percentage of students who always use them, do not appear to be integral to the learning process for most students. Interestingly, Encarta and e-Dictionaries are the least used resources, falling into the "never" category with mean values of 2.29 and 1.79, respectively. This suggests that these resources are virtually unused among the surveyed students.

Hypothesis One: There is no significant relationship between access, utilization and availability of open educational resources for learning.

Table 5:

Relationship Between Accessibility and Use of E Learning Resources for Distance Learning

			Students' access to open educational resources	Students' use of open educational resources
Spearman's rho	Availability of open educational resources	Correlation Coefficient	-.283**	.487**
		Sig. (2-tailed)	.000	.000
		N	381	381
	Students' access to Open educational resources	Correlation Coefficient	1.000	-.188**
		Sig. (2-tailed)	.	.000
		N	381	381
		Correlation Coefficient	-.188**	1.000

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	Students' use of open educational resources	Sig. (2-tailed)	.000	.
		N	381	381

The results of the analysis shed light on the complex interplay between accessibility, availability, and utilisation of open educational resources (OER) among distance learning students. These findings provide valuable insights into the factors that influence how students interact with and make use of educational materials in the digital learning environment.

The negative correlation between students' access to OER and the availability of these resources suggests an interesting dynamic. One possible interpretation is that when OER are more readily available, students may perceive less urgency or need to actively access these resources. Alternatively, it could indicate that despite availability, certain barriers such as technological challenges or lack of awareness may impede students' ability to access the resources.

The positive correlation between students' utilisation of OER and the availability of resources aligns with expectations. As the availability of OER increases, students are more likely to incorporate these resources into their learning. This emphasises the importance of ensuring a robust and diverse pool of resources to enhance student engagement and learning outcomes. The negative correlation between accessibility and utilisation is intriguing. It suggests that while students may have increased access to OER, this doesn't necessarily translate into higher utilisation. Factors such as the quality of resources, students' digital literacy, or the alignment of resources with their learning needs may influence the extent to which they are actively used.

These results underscore the need for a nuanced understanding of the relationship between accessibility, availability, and utilisation of OER in distance learning contexts. Educators and policymakers should consider these dynamics when designing and implementing digital learning initiatives. Addressing potential barriers to access, promoting awareness, and ensuring a diverse array of high-quality resources are essential steps to optimise the benefits of OER for distance learning students in Oyo State.

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Further qualitative research or surveys could help unpack the specific factors contributing to the observed correlations and inform targeted interventions for improving the overall e-learning experience.

Hypothesis Two: There is no significant difference between male and female students' utilisation of e-resources for learning

Table 62:

t-test Analysis of Gender Difference in Students' Use of Open Educational Resources for Distance Learning in Oyo State

	Gender	N	Mean	Std. Deviation	Df	t	Sig. (2-tailed)	Remark
Utilisation of open educational resources for distance learning	Male	87	2.17	.781	379	.922	.357	Not rejected
	Female	294	2.08	.814				

Table 6 presents t-test analysis comparing the use of open educational resources by male and female students for distance learning. The results show no significant gender difference in the use of open educational resources, with a p-value greater than the 0.05 significance level. The mean score for male students was 2.17, while for female students it was 2.08, with a standard deviation of 0.814. The null hypothesis (H0) assumes no significant difference. The p-value is greater than the 5% significance level($p>0.05$), indicating that the observed differences are likely due to random variation and not a significant difference in open educational resources usage.

Discussions

Generally, the discoveries by the study provide understanding into what is happening with respect to open education in distance education institutions in Oyo-Areas-Considering the present state: availability, access, and use of open educational resources. These discussions expound on the above findings with literature citations.

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Findings showed that a considerable number of students own essential devices like smartphones, tablets, and laptops for engaging with open educational materials (Mathew, Joro, & Haruna, 2015; Essel et al., 2018; Haleem et al., 2022; Ebere & Okuro, 2024). Furthermore, students often access open educational resources through their centre's website and enjoy the privilege of free Wi-Fi, thus making reliable internet access one of the most crucial factors in distance education (Bordoloi, 2018; Falade & Peter, 2024). Many students also subscribe to internet data, with such subscriptions demonstrating the extent of their interest in getting to educational materials (Mehta & Wang, 2020; Kabir et al., 2020). The opportunity also extends among students to using applications to access resources and to physical library services (Osamuyimen et al., 2021). However, students rarely make use of resources such as educational CDs, e-library platforms, e-books, and e-manuscripts (Mashui, 2023).

The lack of use of electronic resources such as e-journals, e-magazines, online newspapers, and research reports by students must be critically questioned. As the Technology Acceptance Model (TAM) would predict, this is largely a function of students' perceptions of the benefits and usability of such resources: when students do not perceive the huge difference that digital resources can make to their performance or find it difficult to use these sites, their incentive to use them is low (Davis, 1989). Additionally, Rogers' Theory of Diffusion of Innovations sheds more light on the fact that complexity and compatibility are determinants in the adoption of new technologies. Academic e-resources generally entail high learning curves and may not necessarily be compatible with the information-seeking behaviours of students already established, hence discouraging their adoption and integration into academic practice (Rogers, 2003). Besides, the model of Digital Divide identifies the structural barriers that make this a problematic issue since unequal access to secure internet and discrepancies in digital competences prevent numerous students from regarding such online material as credible sources of research (van Dijk, 2006). In the context of these theoretical perspectives, the explanations for such e-provision being underutilised among the student group despite availability are established, with the

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sporadic use of internet instructional videos, audio materials, and packages such as Encarta and e-Dictionaries being a case in point among students who participated in this study corroborating the need for targeted interventions to enhance the uptake and optimum utilisation of learning digital resources.

The findings of this study illuminate a complex interplay among the availability, accessibility, and utilisation of Open Educational Resources (OER) within the context of distance learning. While there exists a positive correlation between the availability of OER and their utilisation—suggesting that a diverse array of resources encourages students to engage with them ($r > 0$, $p < 0.01$) (Swain & Pathak, 2024)—an unexpected negative correlation between availability and access indicates that the mere presence of resources does not ensure their retrieval by students. This paradox may be attributed to barriers such as limited digital literacy or a lack of awareness regarding the location of pertinent materials ($r < 0$, $p < 0.05$) (Rets et al., 2020). Furthermore, the negative association between accessibility and utilisation ($r < 0$, $p < 0.05$) emphasises that even when students are capable of reaching OER platforms, factors such as resource quality, usability of the interface, or misalignment with curricular objectives may hinder meaningful engagement (Davis, 1989).

The t-test analysis of the study indicates a notable. However, the analysis shows no significant gender difference in the use of open educational resources, indicating that male and female students have similar use patterns (Bamidele & Adekanmbi, 2019). The implication is that once access is secured, gender does not significantly affect the use of open educational resources, demonstrating the necessity for equal opportunity for access (Ahmad, 2015).

Conclusion

In conclusion, this study endeavours to provide a complete perspective on the access to and use of OER by distance learning students in Oyo State, Nigeria. The results reveal that most students have the devices necessary for such online learning and know the means to gain access to OER through various ways, such as through their centre's website, free Wi-Fi, or their separate data subscriptions. However, despite seeming so accessible, certain OERs, such as educational

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CDs, e-library platforms, e-books, and e-manuscripts, are underutilised. Meanwhile, e-journals, e-magazines, online newspapers, and online research reports are being largely neglected, displaying urgent avenues that should be pursued to bring about a balanced and diverse utilisation of the educational resources.

However, noteworthy that no significant difference exists between genders regarding OER utilisation when such access is achieved. It is on this note that equal access opportunities for all students, regardless of gender, should be promoted, and initiatives should concentrate on the initial discrepancies in access.

Recommendations

Based on the findings of the study, the following recommendations are put forth:

1. Efforts should be made to diversify the types of OER that students engage with. Encouraging the use of educational CDs, e-libraries platforms, e-books, and other resources that are currently underutilized could enhance the overall learning experience.
2. To address the low utilization of certain resources like e-journals, e-magazines, and online research reports, targeted awareness campaigns and training sessions should be conducted to promote the importance and relevance of these resources in academic pursuits.
3. Ongoing assessment and monitoring of students' access and utilization patterns should be conducted. This will allow for the identification of evolving trends and the adaptation of strategies to meet the dynamic needs of distance learning students. By implementing these recommendations, educational institutions in Oyo State can strive to create an inclusive and enriched digital learning environment that maximizes the potential benefits of open educational resources for all students.

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